

Testimony before the House Education Committee May 30, 2012
Eileen Weiser, Member, State Board of Education

I recognize the stresses that Michigan schools face, and the reasons for re-examining our K-12 curriculum. But I also understand the importance of Algebra 2 and foreign languages for Michigan students, and urge you to keep both requirements.

MDE has submitted "Preparing Michigan Students for Work and College Success", a comprehensive paper with compelling reasons to keep the Michigan Merit Curriculum. Among them: 80% of the top 50 fastest-growing jobs will require education beyond high school; 40% of all new jobs will require at least an associate's degree. Two-thirds of all new jobs will require some postsecondary education.

Why should students take Algebra 2? An engineer I know speaks eloquently about math simply being another language that if mastered will bring success in many areas of adult life. Research shows that students who are challenged do far better overall than those who aren't. Algebra 2 teaches students to think logically, how to work with complex material and to see how knowledge builds within a progression of problem solving and learning.

All students can and should learn Algebra 2. Members of the State Board recently visited Oakland Schools Technical Campus SE and talked with their teachers in health services, IT, manufacturing and assembly, agriculture and other technical areas. Their facilities are filled with 6th-12th graders. While it's challenging to teach Algebra 2 in CTE, teachers there are doing it well and believe it's worth the work. Their graduates often start in lower level entry positions and work their way through additional career training, college and post-graduate studies later as job opportunities arise. Oakland supports world languages too - which can be taught any time during K-12 - so their graduates can work wherever Michigan employers have jobs.

There are other good CTE/STEM programs around the state. But many schools still have vocational education or older-style career tech education. New STEM programs like Project Lead the Way incorporate robotics with all aspects of science and math for grades 6-12. They are comprehensive project-based programs teaching students both rigorous academics and soft skills for employment.

At the Atlantic's Technology in Education forum in DC last week, Microsoft stated they chronically have 5,000 positions paying \$100,000 or more that can't be filled with US workers. Presenters told of "Big Data Jobs", where employees analyze and draw conclusions from disparate data streams. Employers usually hire engineers for these jobs but are now looking for high school graduates with STEM education, robotics, and experience writing programming code. They are willing to mentor these young people - skipping 4 to 6 years of college cost and time - because they place a high value on outcome and teamwork. That may seem to contradict the need for post-secondary education, but it appears that educators in some states have a different vision of the opportunities ahead and are becoming nimble enough to provide an education previously found in colleges alone.

All Midwest states except Michigan fund K-12 STEM education initiatives. That's reflected in our expectations and our students' performance. 40% of high school graduates in a recent survey said they were not adequately prepared for employment or postsecondary education; that if they could

repeat their high school experience, they would work harder, especially in math, science and English.

Last year, Education Week's annual *Technology Counts* publication stated that only 16% of US teacher preparation institutions can adequately prepare a K-6 teacher to teach elementary school math. I don't know about our teachers, but we know Michigan students struggle with math. In 2011, 35% of Michigan 4th graders scored proficient or above on the NAEP and 31% of 8th graders the same. Instead of lowering standards, shouldn't we focus on helping schools do better by the nearly 70% of Michigan students who are below proficient?

Reading progress is especially frustrating. Educators have known for nearly a decade how to teach reading successfully, aiming at literacy by third grade. Despite this knowledge, our success rate is low. In 2011, Michigan's 4th graders scored 31% at or above NAEP proficient; our 8th graders scored 32%. Those are dismal numbers for a subject in which we have good guidance for successful instruction.

I admire and respect Michigan's passionate and dedicated educators. Every teacher enters the profession wanting to make a difference in a student's life. But our schools appear to have a mismatch between their instruction and how students learn best, and where they are headed in the future. Teachers are frustrated; Gen Y children are opting out, including the gifted and talented.

Children now approaching school age are growing up with smartphones, iPads and iPhones. Their personal digital exposure will be high, even when there is no home computer. Children have different learning styles. While we will always need traditional classroom instruction, meeting these children at least part way with technology is going to be important. The new learning resource disparities are already being dubbed the "App Gap".

During the 2010-11 school year, a Ludington school placed iPads in a kindergarten and second-grade class. The former second-graders took the 3rd grade MEAP last fall. They scored 6 points higher in math, and 16 points higher in reading than the third grade cohort before them. Ludington passed a technology millage this spring to continue the project. Michigan's creative educators have flipped classrooms, classrooms using "bring your own" smartphones for research and projects, smartboards, iPads with personalized curricula, apps from sources like PBS and NASA, and all manners of other new methods for solid instruction. Computers will never replace teachers, but teachers who use computers will replace teachers who don't.

We can keep trying to change student learning styles to the way schools want to instruct, or we can find a new, more successful common path for kids and schools without lowering standards. How do we pass meaningful school accreditation that leads to better performance? How long will it take for all Michigan schools to use instruction that works for children? What do we need to do to help them?

As an elected official, I believe I'm best representing Michigan citizens by asking schools to accept the educational challenges our children bring and meet them with both academic rigor and high outcomes. I hope you believe that too, and respectfully ask you to retain both foreign languages and Algebra 2 in our state curriculum.